

CLAIMS:

- Sub B1
- 1 1. An electro-chemical deposition system, comprising:
- 2 a) a mainframe having a mainframe wafer transfer robot;
- 3 b) a loading station disposed in connection with the mainframe;
- 4 c) one or more processing cells disposed in connection with the mainframe;
- 5 d) an electrolyte supply fluidly connected to the one or more electrical processing
- 6 cells;
- 7 e) a spin-rinse-dry (SRD) chamber disposed between the loading station and the
- 8 mainframe; and
- 9 f) a thermal anneal chamber disposed adjacent the loading station.
- 1 2. The system of claim 1 wherein the thermal anneal chamber comprises a rapid thermal
- 2 anneal chamber having a heater plate.
- 1 3. The system of claim 2 wherein the heater plate comprises an atmospheric pressure heater
- 2 plate.
- 1 4. The system of claim 1, further comprising:
- 2 e) a system controller adapted to control operations of one or more components of
- 3 the electro-chemical deposition system.
- 1 5. The system of claim 4, wherein the thermal anneal chamber further comprises a gas inlet
- 2 adapted to introduce one or more gases into the thermal anneal chamber.
- 1 6. The system of claim 5 wherein the system controller controls the gas inlet to the chamber
- 2 to provide a chamber environment having an oxygen content of less than 100 parts per million.
- 1 7. The system of claim 6 wherein the gas inlet is connected to a nitrogen gas source to
- 2 introduce nitrogen into the chamber.
- Sub B2

1 8. The system of claim 6 wherein the gas inlet is connected to a nitrogen gas source and a
2 hydrogen gas source to introduce nitrogen and hydrogen into the chamber, wherein the hydrogen
3 content is maintained at less than about 4%.

1 9. The system of claim 1 wherein the loading station comprises:
2 i) one or more wafer cassette receiving areas;
3 ii) one or more loading station wafer transfer robots for transferring a wafer between
4 the loading station and the SRD station and between the loading station and the thermal anneal
5 chamber; and
6 iii) a wafer orientor.

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